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AUTHOR Salser, Mark R.
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INSTITUTION Educational Research Associates, Portland, OR.
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ABSTRACT

Individualized instruction optimizes time spent by student and teacher for the greatest benefit of both. Most instructional time is currently spent lecturing. By replacing live lectures with recorded lectures, the teacher is free to provide personal, individualized instruction to each student. An effective one-to-one student-teacher ratio is established. Individualized instruction puts fewer demands for routine tasks on the teacher; however, it requires resourcefulness and ingenuity to ensure that each student masters every part of a subject. While individualized instruction requires a greater initial investment in materials and equipment, financial savings can be realized. During five years of individualized instruction at the Centennial High School Business Learning Center, the cost per student was significantly less than it would have been under the traditional lecture system. Individualized instruction requires a higher student-teacher ratio in order to achieve cost effectiveness; however, because the teacher is freed from routine tasks, this does not pose a problem. A school can offer more courses since students in the same learning center do not need to be studying the same material. Mainstreaming of handicapped and gifted students is also enhanced. Individualized instruction is a framework the central theme of which is adaptability. (DC)

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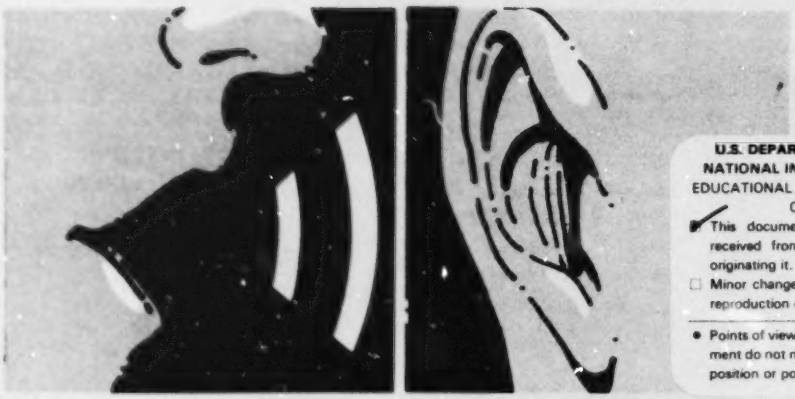

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INSTRUCTION

is a method of optimizing time spent by student and teacher for the greatest benefit of both.

The average teacher now spends between 70 and 80 percent of his/her time in front of a class, lecturing, with little time available for individual consultation with students. Individualized Instruction management procedures merely involve transferring the burden of the repetitive instruction to a recorded lecture. Such lectures also may be prepared far more carefully than a teacher has an opportunity to do for daily "live" lectures.

Nevertheless, Individualized Instruction does not replace the personal instruction of the teacher. Rather, it augments the teacher's work by assigning to the "prepared" instructional program the responsibility for all routine instruction. This provides the teacher with the time for more personal attention to each student's individual needs . . . than otherwise would be possible.

Remember when you dreamed of captivating your students and leading them carefully through the most complex materials with a combination of startling logic, insightful description, and personal charm? Remember, too, when you first stepped into your own classroom, and how quickly so many projects had to be put aside -- casualties in the constant battle of lesson plans, bureaucratic paperwork, attendance forms, fast students, slow students, handicapped students, assemblies, locker checks, and more unruly students -- ad infinitum?

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Even the most successful and talented teachers dream often of being able to devote their time and skills to just one student at a time -- one who could appreciate and benefit from what they have to offer. Yet this, too, has remained an unfulfilled dream because such an idea is economi-

cally impossible. Research has shown that even moderate decreases in student/teacher ratios have not proved effective until reaching approximately 15 to 1 . . . at which point the burden would already be many times more than our economy could bear.

However, this assumes that it is necessary to achieve an absolute 1 to 1 ratio. Individualized Instruction, on the other hand, permits teacher and student to enjoy an effective 1 to 1 relationship, because the teacher is free to spend as much time as needed with each student.

Teachers are now able to observe students more closely -- their motivations, abilities, study habits, and attitudes. When students experience difficulties, the teacher, knowing them better as individuals, also knows the approach(es) most likely to succeed. For the first time since leaving school themselves, teachers now have the freedom -- the responsibility -- to use all the skills and techniques they learned in and out of school . . . to guide a student through each "rough spot."

One instructor in an Individualized Learning Lab, when asked why he had chosen to speak with one particular student -- seemingly at random from among more than fifty busily studying there at the time -- said, after a short pause, "Well . . . he has a way of hunching his head and shoulders when he's got a problem . . ." It is precisely this attention to the individual habits of students in which few lecture classroom teachers have an opportunity to indulge themselves.

I.I. puts fewer demands for routine planning, preparation, and presentation on the instructor. It will, however, demand as much resourcefulness and ingenuity as that instructor can discover within him/her to ensure that each and every student masters each and every part of a subject.

Mastery is, after all, the object of the educational process. For many years, we have stressed the factor of time over that of mastery by judging a wide range of performances as acceptable. Now we realize that it is more desirable to set higher levels of performance as the standard, and require that students demonstrate mastery of the subject for completion, regardless of the time it takes.

"This may sound good," you say, "but . . . it costs too much money."

Quite to the contrary. While it is necessary to make slightly greater initial investments in instructional materials and equipment than before, it is more than recovered in the increased teacher freedom we have discussed, in scheduling flexibility for administrators, and in wider course offerings for students. When properly managed, individualized facilities can, in fact, yield substantial financial savings as well.

Look at the chart on the next page. It provides a comparison between the costs of providing instruction (several years after introduction of this Individualized Learning Center) via both lecture classes and Individualized facilities. By 1975, when the chart begins, courses were only offered in the Learning Center. All costs for lecture classes, therefore, are approximated from student enrollments in those subjects at the BLC, and adjusted for average classroom load in other courses at the school.

During the first few years of operation, several courses were offered in both formats; students in the Individualized BLC consistently scored higher on standardized tests than did even "high achievers" in the lecture classes. One student even completed a full year of Accounting by

November, while another in the same class -- with a learning disability -- completed the same materials by the end of the year. Since they worked independently of each other, the progress of one did not affect the other, and the instructor could devote time to helping either student as necessary.

As you can see, during the first year shown (75-76), although costs in the BLC were considerably higher than lecture classes (if they were offered), the BLC's cost per student was less. Of course, this can only happen by increasing the number of students supervised by the teacher there -- by increasing the student/teacher ratio.

Not a pleasant prospect? Remember, however, the recordings provide all of the basic, repetitive instruction; the BLC instructor's primary assignment is working with students privately. A BLC aide may handle much of the attendance, equipment maintenance, check-out, routine grading, and other paperwork. Not having to prepare and present daily lessons provides teachers with more opportunity to assist with special courses of study for review, reinforcement, enrichment, or remediation -- whichever may be appropriate for a specific student at a specific time.

Supervising students in an Individualized setting does not entail the same demands and constraints of the lecture format -- nor is it delimited by the same teacher/pupil ratio. With support from recordings and paraprofessional aides, the instructor may spend almost 100% of his/her classroom time in working privately with students who have questions . . . or those who they have come to recognize as having "a way of hunching his head." And, if the instruc-

PRODUCTIVITY COST ANALYSIS

CENTENNIAL H.S. BUSINESS LEARNING CENTER

Standard Lecture Classes*		1975-76	Centennial BLC	
Accounting 1-2	155		Accounting 1-2	
Accounting 3-4	11		Accounting 3-4	
			Accounting Spec. Lab	
			Recordkeeping	
			PERSONAL SHORTHAND	
			Business Communications	
	166			475
Classroom Load	33		Classroom Load	50
Teacher Salary	$11,350.00		Teacher Salary	$11,350.00
Materials	1,822.68		Aide Salary	2,700.00
Equipment	480.00		Materials	4,016.72
	$13,652.68		Equipment	1,052.12
				$19,118.84
$13,652.68 ÷ 166 = $82.25			$19,118.84 ÷ 303 (A.D.M.) = $63.10	
Average cost per student			Average cost per student	
		1976-77		
Accounting 1-2				
Accounting 3-4			Accounting 1-2	
			Accounting 3-4	
			Accounting Spec. Lab	
			Recordkeeping	
			PERSONAL SHORTHAND	
			Business Communications	
	145			640
Classroom Load	29		Classroom Load	68
Teacher Salary	$16,000.00		Teacher Salary	$16,000.00
Materials	1,664.60		Aide Salary	3,000.00
Equipment	480.00		Materials	4,372.50
	$18,144.60		Equipment	1,052.12
				$24,424.62
$18,144.60 ÷ 145 = $125.13			$24,424.62 ÷ 330 (A.D.M.) = $74.01	
		1979-80 (First Semester)		
Accounting 1-2 (3 classes)	65		Accounting 1-2	65
Accounting 3-4 (1 class)	12		Accounting 3-4	12
Recordkeeping (1 class)	30		Accounting Spec. Lab	9
			Recordkeeping for Bus.	70
			" for Pers. Fin.	25
			PERSONAL SHORTHAND	25
			Business Communications	10
			**Data Processing (Intro)	8
			**Business Economics	4
	107			219
Teacher Salary	$17,477.00		Teacher Salary	$17,477.00
Materials	1,020.78		Adult Aide Salary	5,122.00
Equipment	480.00		Materials	2,240.08
	$18,977.78		Equipment	1,892.00
				$26,731.08
$18,977.78 ÷ 107 = $177.36			219 + 30% additional students 2nd Sem.	
			$26,731.08 ÷ 180 (A.D.M.) = $148.51	

Centennial (like many schools across the country) suffered substantial decreases in enrollment during 1977-79 due to considerable out-migration. Scheduling changes have eliminated Acctg. Specialty Lab. Otherwise, the difference in cost per student in 1979-80 could be even more dramatic. It is clear that BLC continues to offer even more subjects despite this -- impossible in comparable lecture formats. BLC students continue to score higher than the norm.

* If offered ** First Semester Offered

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tional materials are well prepared, there will be far fewer questions than you think, as students become used to reviewing recorded lectures to ensure that they understand all the content.

Is your school too short of instructors to offer all the courses you would like? Not enough students available to take some courses during some periods? Again, you should remember that the recordings are providing all of the routine instruction.

What if students should listen to different subjects at the same time? Two subjects? Three? How about six, like the Centennial BLC? There is no reason this cannot be done; by studying and progressing independently, students are already using many different lessons within the same subject. The only relevant question concerns whether a specific instructor is capable of answering questions on the subjects offered.

In this manner, even if only five, six, or eight students sign up for a subject during a specific period, combining them with students in other subjects can create a group large enough to justify the time of an instructor. Scheduling is simplified . . . you need only schedule students for any of those subjects into the Learning Center, regardless of the number, time of day, or skill level of the students.

Even "mainstreamed" and "TAG" students can be included in these plans. They can receive the benefits of instructional assistance from specialists who, themselves, are more free to meet a specific need when it arises. At the same time, they benefit from being in close contact with a wide variety of students -- far more like the real world than homogeneous "special" classes -- while I.I.'s flexibility makes it possible for instructors to devote time to them without neglecting the rest of the "average" students.

Whatever instructional techniques and/or materials are appropriate for individual students (whether "gifted," "retarded," or one of the mythical "average" students) may be used in an Individualized facility. Teachers can make necessary changes in individual students' curricula when it is needed -- not before, and not too late. When standard materials are not completely to the liking of the teacher, there is more time to devote to careful preparation of a few additional lectures, which may be recorded and inserted in the instructional program, without disrupting its Individualized nature. Occasional live discussions and seminars may even be arranged, and specialized teachers or counselors can meet privately with students whenever appropriate. In practice, anything that works for students can be arranged.

Individualized Instruction is not a cure-all for every ill of contemporary schools. It is a framework -- a philosophical structure for education -- whose central theme is adaptability.

WOULD YOU LIKE TO LEARN MORE ABOUT INDIVIDUALIZED INSTRUCTION?

WRITE FOR A FREE COPY OF OUR GUIDE TO I.I. MANAGEMENT PROCEDURES.

EDUCATIONAL RESEARCH ASSOCIATES
A Nonprofit Educational Research Corporation
333 SW Park Avenue
Portland, Oregon 97205
Phone: (503) 228-6345